
SPECIES AND HABITAT: BOTANY

Characterization

Species of concern in the North Fork Coquille Watershed include giant foldleaf (*Diplophyllum plicatum*), striped foldleaf (*Diplophyllum albicans*), coffee fern (*Pellaea andromedifolia*), spring phacelia (*Phacelia verna*), peppery bolete (*Chalciporus piperatus*), Cusick's checkermallow (*Sidalcea cusickii*), loose-flowered bluegrass (*Poa laxiflora*) and *Cetrelia cetrarioides*. In addition to the known species of concern, the Species and Habitats: Botanical Appendix lists the special status and survey and manage species that potentially may occur in the Watershed.

The giant foldleaf, a liverwort, and the striped foldleaf grow in moist old growth forests, often near streams. Known sites include areas in North Fork Coquille Area of Critical Environmental Concern and Big Tree Recreation Site/Cherry Creek Research Natural Area. Other old growth areas in the Watershed, with similar habitats, may support additional foldleaf populations.

The Big Tree Recreation Site also contains the District's only known occurrence of loose-flowered bluegrass. This is a tracking species that can be overlooked. Loose-flowered bluegrass habitat ranges from moist forests to open rocky slopes in the lowlands to mid-elevation mountains.

Peppery bolete grows in low to mid elevation forests and is associated with coarse woody debris. The only known site for this plant in this Watershed is in a 22-year-old progeny test site. *Cetrelia cetrarioides* is a foliose lichen that occurs mostly on hardwoods in riparian areas.

Cusick's checkermallow, a tracking species, is known to be fairly well-distributed. It occurs on rock bluffs and other open slopes. Most rock bluffs, in the North Fork Coquille Watershed, are in the eastern third of the Watershed. Adjacent watersheds have more populations than the North Fork Coquille Watershed. This likely due to the relative availability of rock bluff and other open sites that provide suitable cusick's checkermallow habitat.

Spring phacelia, a tracking species, occurs on a large rock bluff on Cherry Creek Ridge. This is the single known site for that species in the Watershed. Spring phacelia is more common on the eastern edge of the Myrtlewood Resource Area, where it is found on rock bluffs at higher elevations.

The District's only known coffee fern site is also on Cherry Creek Ridge. This species occurs in the California North Coast Range, the Sierra Mountains, and the Cascade Range in Oregon. The Cherry Creek Ridge site appears to be a disjunct population. The habitat for coffee fern is generally dry or rocky areas. On Cherry Creek Ridge, it is growing in the hollow of an extensive rock bluff. This rock bluff is considered a special habit due to the variety and abundance of species on that site.

Another special habitat in the Watershed is a sphagnum bog near Coak Creek. Although the sphagnum (*Sphagnum squarrosum*) is not a special status plant, rare plants are often associated with sphagnum. This may be the southernmost interior Coast Range sphagnum bog (John Christy, pers. comm.)

Current Conditions

Comparisons of 1943 aerial photographs to recent photos show forest vegetation encroachment has reduced the rock outcrop habitats necessary for spring phacelia, coffee fern and checkermallow. Figure Bot-1 is from a 1943 aerial photo and shows a prominent 3-mile long band of rockland on the west side of Coos Mountain above the Alder Creek Drainage. This rockland area is largely hidden on the 1990 aerial photo

shown in Figure Bot-2. A 1914 vegetation map (Map Veg-6) shows a “non-vegetation” area in the Coos Mountain area suggesting the cartographer believed the site was non-forest and not just a non-reforested burn. The 1879 survey notes for the line between sections 32 and 33 showed the line intersecting cliffs. The line summary described the vegetation as a “timber scattering large fir, some hemlock cedar, maple, alder, yew, myrtle, chittim and chincapin” (Lackland 1898). The survey notes showed a dense shrub layer. The “timber scattering” descriptor indicates widely spaced trees that would have allow sunlight to reach to rockland areas.

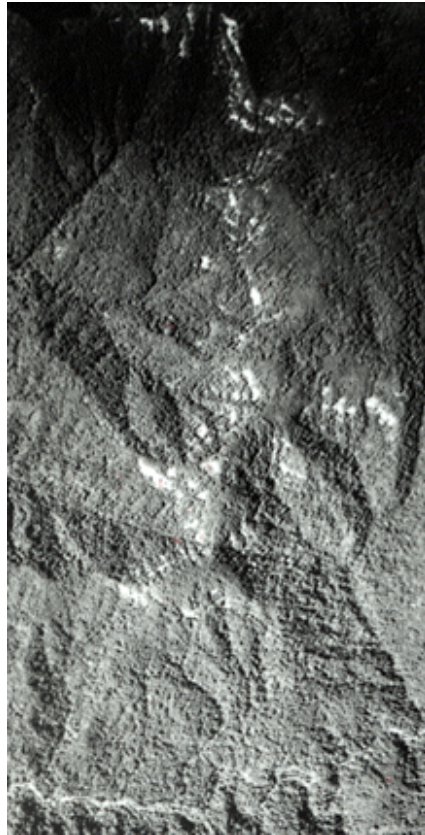


Figure Bot-1 Coos Mountain in 1943

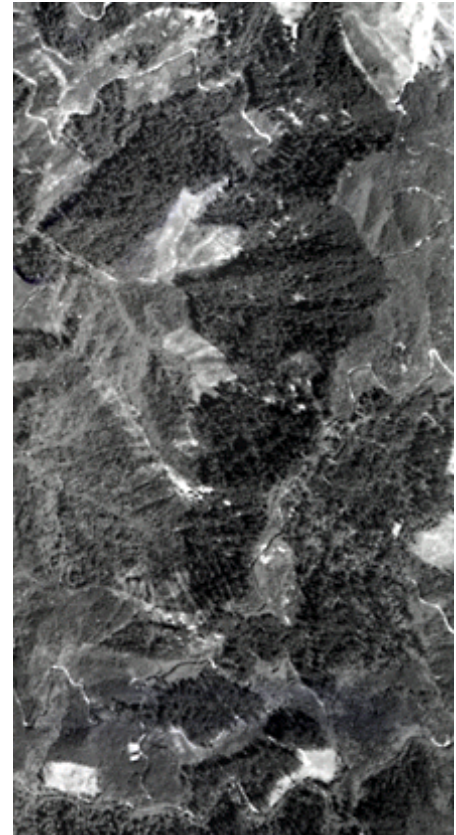


Figure Bot-2 Coos Mountain 1990

Similarly, the rock land on Cherry Creek Ridge, above

Little Cherry Creek, appears much larger in the 1943 photo than in the 1990 photo (Figures Bot-3 and 4). This area corresponds to a burned and not restocking area on the 1914 vegetation map (Map Veg-6). The 1891 survey notes for the east line of section 25, T.27S.,R11W., showed burned timber on the ridge top. On the south side of the ridge, the surveyor crossed a “rocky hillside” and entered green timber about a third of the way down the slope (Cathcart 1892). Fire history data collected just to the west of the rockland area on Cherry Creek Ridge includes fire scars documenting fires in 1799, 1786, and in 1850 or 1851. Ring counts on 6 trees on that same site show regeneration dates of 1744, 1771, 1771, 1780, 1791, and 1803. The pattern of birth dates is consistent with birth date and fire scar patterns observed in this and adjacent watersheds suggesting the fires in about 1738, 1769, 1779 and 1789 may have also burned this site (Fire History Appendix).

Nonnative plants have invaded rock outcrop areas and

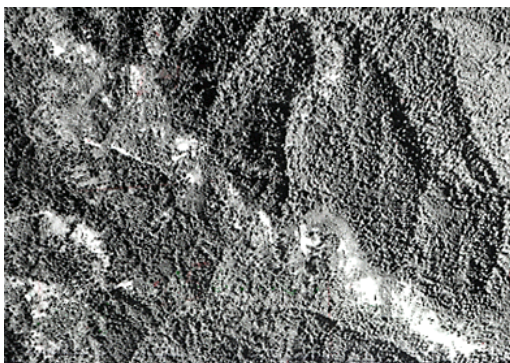


Figure Bot-4 Cherry Creek Ridge in 1943 showing rockland area on south slope.

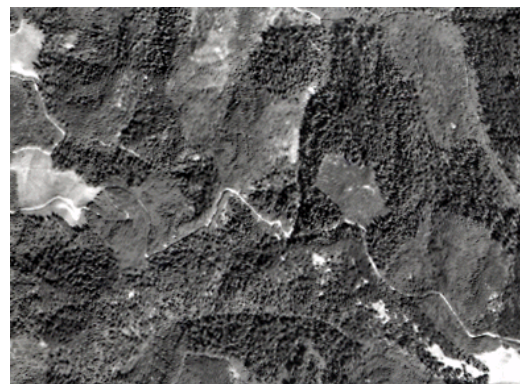


Figure Bot-3 Cherry Creek Ridge in 1990. Unit in southwest corner was planted in 1991. The 1943 and 1990 images are sized so their east-west distance scales are approximately equal. The north-south distances in the 1943 photo are compressed by photo distortion relative to the 1990 image.

compete with native species, such as the checkermallow and the coffee fern. The spring phacelia often grows on moss mats on rock that won't support other vegetation and therefore tends to be less affected by nonnative plant competition as it can grow in areas of very little soil.

The old growth habitat suited to giant and striped foldleaf is more abundant in the eastern third of the Watershed. The primary habitat falls within riparian reserves, since the plant is generally associated with perennial streams. Several special designations within the Watershed contribute to the stability of the habitat for these species. The existing sites in the watershed are in the Cherry Creek RNA and the North Fork Coquille ACEC, both of which fall within LSR 261. These special designations provide protection to the existing habitat. Management direction for the LSR lands includes active management for increasing late-successional habitat (USDI 1995, pg 19). In the Watershed, 25% of BLM lands support stands 200-years old and older (Vegetation Section).

The peppery bolete has a broad habitat, growing in low to mid elevation forests of most seral stages. This forested condition is abundant in the Watershed, outside the rural residential and agricultural areas. The trend for this species should be stable to increasing. It is expected that more populations of this mushroom will be found.

Loose-flowered bluegrass habitat includes a variety of conditions that are present throughout the Watershed. Future surveys should yield more sites of this plant.

The lichen, *Cetrelia cetrarioides*, habitat is in riparian areas. Since existing riparian areas in the Watershed are protected either by the Forest Plan on BLM lands, or Oregon State Forest Practices on other lands, the trend for this species is expected to be stable.

The sphagnum bog special habitat type may have once been much more abundant in the lower, western parts of the Watershed. Some species associated with this bog, such as Oregon ash, Oregon crab apple and Douglas spiraea were once abundant in the wide valley bottoms. Although these areas are mostly developed now, there may still be some sphagnum bogs or similar special habitat on non-BLM lands.

Aerial photos taken in 1943 show what may be a few remnant prairies on southwest facing upper slopes or ridges in the western part of the Watershed. Cadastral survey notes (Flint 1872) confirm that at least one of these openings, in the SW 1/4, section 14, T.27S.,12W., dates back to at least 1872¹. These ridge top openings have since disappeared through a combination of aggressive reforestation, natural seeding, and exclusion of fire and livestock.

Reference Conditions

Before Euro-American settlers came into this Watershed, the area in old-growth was dependent on the amount of time that had passed since the last stand replacement fire. The occurrence of stand replacement fire was in turn affected by changes in climate. In the late 19th and early 20th century, land surveyors made frequent reference to fire killed and fallen timber, and to heavy brier vines. This invites speculation that fire caused at least some old-growth stands to be more open than the remaining stands typically are today. Before the fire control was actively practiced in this Watershed, rock out crops and thin-soil openings around the rock may have been kept in a more open condition by fire, or if not maintained, then at least they went through cycles of expansion and contraction. Those cycles would have been in response to changes in the climate influenced fire frequency. Plant species that thrive under open conditions and repeated fire would have had a competitive advantage in this Watershed in the 1500s and 1700s. At other times, those

¹ Similar sites were visible north of Laverne Park, on the Blue Ridge, Morgan Ridge, and Zumwalt area. It may be now difficult to prove that any of these were fire maintained prairies.

species would have been confined to fire prone southwest facing ridge tops, on thin soil sites next to rock outcrops, and occasionally on sunny south facing gentle slopes and benches kept open by heavy elk browsing. Forest associated plants survived the 1700s fire episode in the stands that survive the fires on the lower slopes and in north facing drainages. In the 1500s, forest associated species either survived in small refuge areas, or endured an extended period of early seral conditions or were temporally expunged from the Watershed (fire history appendix).

The riparian areas in the special areas mentioned under Current Conditions are a good representation the habitat condition needed by the foldleaves and *Cetrelia cetrarioides*. The special areas are important for answering monitoring questions as they provide an excellent opportunity for providing baseline information to determine impacts/benefits of projects within the Watershed.

Two small oak prairies are on BLM land in Sect. 35, T.27S., R.12W. This parcel is allocated as connectivity. The northern prairie is on a rock outcrop. The southern prairie, which is shown on a 1910 map and referred to as a "glade," is probably the result of shallow soil. Based on aerial photo interpretation, these prairies have not changed in size since 1950. These sites have a high probability of supporting check mallow. However, the sites have not been surveyed due to a difficult river crossing. These prairies are next to forests with birth dates of 1890 and 1780, which leads to the conclusion that this area is in a stable condition. These areas provide a reference condition of this habitat type.

The sphagnum bog, though small and surrounded by relatively young timber, provides a reference condition for the valley bottom habitat that may have once existed at a much greater acreage. The species in this bog can be found in patches throughout the bottomlands.

Synthesis

Rock land special habitats: The large rock bluff on Cherry Creek Ridge provides a good example of a rock outcrop habitat. Photographic evidence shows habitats associated with sunny rock outcrops, thin soils and dry prairies have shrunk in the last 50 years. The probable reasons for this reduction of the size of exposed rockland areas are twofold:

- Trees regenerated since the last disturbance have filled the gaps in stands next to the rockland areas and these trees are growing taller. This is changing the conditions in the rockland areas from full sunlight to partial shade.
- Organic matter and inorganic detritus have accumulated on these sites allowing a gradual encroachment of forest species, including trees, into the formerly open habitat.

Before fire exclusion, periodic fire had killed the encroaching forest vegetation, and consumed the organic accumulations associated with that encroachment. Rock outcrops are not usually threatened by development or road building, due to the expense of building through rock.

Forest habitats: Refer to the vegetation section.

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